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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/538,281 | 06/10/2005 | Thomas Kampschreur | NL02 1289 US | 1836 |
| 65913 | 7590 | 09/09/2008 | EXAMINER | |
| NXP, B.V. | | | BARRY, ERIN P | |
| NXP INTELLECTUAL PROPERTY DEPARTMENT | | | | |
| M/S41-SJ | | | ART UNIT | PAPER NUMBER |
| 1109 MCKAY DRIVE | | | | 1793 |
| SAN JOSE, CA 95131 | | | | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 09/09/2008 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/538,281 | KAMPSCHREUR ET AL. | |
| | Examiner | Art Unit | |
| | ERIN P. BARRY | 1793 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 16 June 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-12 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 1-6 is/are allowed.
 6) Claim(s) 7-12 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 June 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Amendment

1. Claims 1-12 are pending in the application

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ricketson et al. (5,307,978) in view of Sabyeying (6,062,459).

Regarding claim 7, Ricketson et al. has a wirebonding apparatus for wirebonding a lead frames being part of a lead frame assembly to semiconductor products mounted on the respective lead frames, which comprises a wirebonding frame 26 (i.e. platform), an indexing device for indexing the lead frame 10 in an index direction relative to the wirebonding frame (figure 2). There is a first, stationary clamp 33 (top) and 34 (bottom) in the index direction relative to the wirebonding frame 26 (figure 2 and column 4 lines 31-50). Ricketson et al. also states a second clamp 40 (grippers on the indexing head 16) for indexing and clamping lead frames that is movable in the index direction to the wirebonding frame (figure 4).

Ricketson et al. does not disclose that the clamp 40 clamps the leads. However, the clamp would be capable of clamping the leads since the leads are located on the

lead frame that is being clamped. While Ricketson et al. doesn't mention the movable clamp clamping the second row of lead frames, it would be capable of doing so by use of the optical sensors 32 (figure 2) there by permitting the movable clamp to be located exactly opposite any one of the bonding sites of the lead frame (column 5 lines 54-59). While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (MPEP 2114). This wirebonding apparatus uses an automatic wire bonder to perform wirebonding operations at the bonding site 72. The wirebonding tool bonds the semiconductors that are gripped 40 and indexed by the indexing head 16 and brought to the stationary clamp (column 7 lines 8-16 and figure 2 and 4).

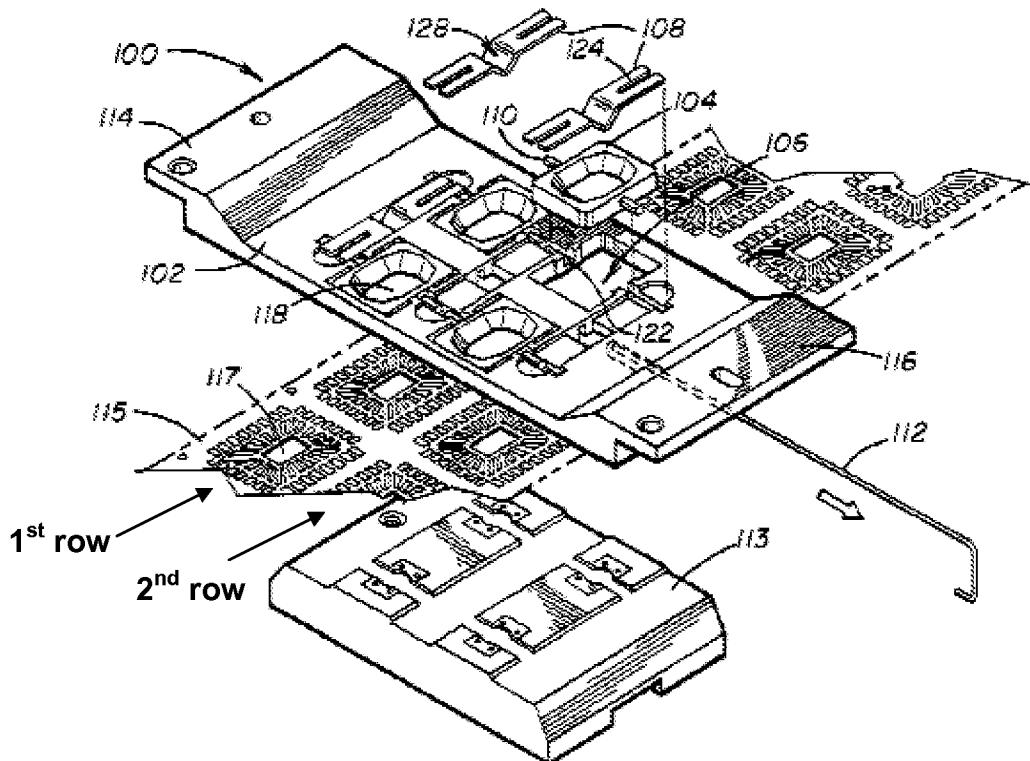
Ricketson et al. does not specifically state more than one row of lead frames. While the apparatus of Ricketson does not expressly teach multiple rows of lead frames, the apparatus would be capable of performing a wirebonding operation on multiple rows because Ricketson et al. states that the Y table 19 can move in the Y direction (figure 2 and column 4 lines 31-38). However, Sabyeying does teach a stationary wire bonding clamp 100 for accommodating multiple adjacent rows of lead frames 117 (figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the clamp by Sabyeying in the apparatus of Ricketson et al. for the benefit of a more efficient wirebonding system that allows for simultaneous bonding of multiple rows of lead frames.

Regarding claim 8, Ricketson et al. states that while the automatic wire bonder is performing bonding on the site, the gripping mechanism 40 releases the lead frame 10

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from the bonding site 72 and repositions itself using the sensor 32 (column 7 lines 8-16 and figure 2 and 4).

Regarding claim 9, Ricketson et al. has the first clamp 33 and 34 that is situated opposite from the second clamp 40 (figures 2 and 4).



Regarding claim 10, the apparatus of Ricketson does not expressly teach multiple/even rows of lead frames, the apparatus would be capable of performing a wirebonding operation on multiple/even rows because Ricketson et al. states that the Y table 19 can move in the Y direction (figure 2 and column 4 lines 31-38). However, Sabyeying does teach a stationary wire bonding clamp 100 for accommodating multiple

adjacent rows of lead frames 117 (figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the clamp by Sabeying in the apparatus of Ricketson for the benefit of a more efficient wirebonding system that allows for simultaneous bonding of multiple/even rows of lead frames.

Regarding claim 11, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (MPEP 2114). The apparatus of Ricketson et al. would be capable of adapting to perform a wirebonding operation while the first clamp is released.

Regarding claim 12, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (MPEP 2114). The wirebonding apparatus of Ricketson et al. would be capable further clamping n lead frames of a further row of lead frames, the n lead frames of the further row being adjacent to the n adjacent lead frames of the first row and the further row of lead frames being adjacent and parallel to the first row as seen in the index direction.

Allowable Subject Matter

4. Claims 1-6 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the prior art does not teach or suggest a method for wirebonding leads of a plurality of lead frames being part of a lead frame assembly by

wirebonding tool to semiconductor products mounted on the respective lead frames, the lead frame assembly being indexable in an index direction relative to a wirebonding frame, and comprising a first row of lead frames and a second row of lead frames that is adjacent and parallel to the first row as seen in the index direction, the lead frames being spaced from each other at a lead frame pitch in the index direction where the method as stated in the claim includes clamping the leads of n adjacent lead frames of the second row by a second clamp, and wirebonding the leads of the n lead frames of the second row to the corresponding semiconductor product.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

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Response to Arguments

5. Applicant's arguments, see Applicant Arguments/Remarks, filed 6/16/2008, with respect to claims 1-6 have been fully considered and are persuasive. The 112 2nd

rejection of claims 3 and 4 have been overcome with the newly amended claim 3. The 35 USC 103a rejection of claims 1-6 has been withdrawn. The applicant argues that the Ricketson et al. does not disclose a wirebonding method for bonding multiple rows of lead frames with a second movable clamp that clamps the leads of adjacent lead frames. This argument is persuasive and the rejection of claims 1-6 has been withdrawn. Claims 7-12 are still rejected as the function of the apparatus must only be capable of performing the method as claimed.

6. Regarding claim 11, the applicant argues that the "adapted to perform a wirebonding operation" is not intended use. While this recitation may no be intended use, it is still functional language (MPEP 2114). Therefore, the wirebonding apparatus must only be capable of adapting to perform a wirebonding operation while the first clamp is released.

7. Regarding claims 7-12, the applicant argues that the second clamp does not clamp the leads on the lead frame. However, Ricketson does disclose a second clamp that would be capable of clamping the leads on a lead frame. The applicant also argues that "capable of" is not the standard required to support a rejection and instead, the prior art must actually teach or suggest each aspect of the claimed invention. While this is true for method claims, apparatus claims are based on structure and not function. The apparatus must only be capable of performing the function in an apparatus claim (MPEP 2114). The applicant also argues that the office action proposes replacing Ricketson's upper and lower clamp plates with Sabyeying's clamp such that Ricketson's work holder could operate on two rows of lead frames. The applicant argues that such

a combination would result in both rows of lead frames being clamped by the same stationary clamp, in contrast to the claimed invention which has a first stationary clamp that clamps the first row and a second movable clamp that clamps the second row. However, the Sabyeying reference was used to simply show the idea of multiple adjacent rows of lead frames being clamped at the same time. The Sabyeying reference has been cited to provide further evidence to support the position that the Ricketson reference would be capable of clamping multiple rows. It would have been obvious at the time of the invention to one of ordinary skill in the art to clamp multiple rows of lead frames during wirebonding to allow for a more time efficient wirebonding process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIN P. BARRY whose telephone number is (571)270-3634. The examiner can normally be reached on Monday through Thursday from 8am-5pm Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. P. B./
Examiner, Art Unit 1793
8/19/2008

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 1793